English Instructions for GRAF 3 Volumetric Chart Program

In summary, this program plots 3D surfaces based on user supplied data files containing the co-ordinates to plot. The data files are read in from tape after GRAF 3 has initialized.

The program reads two data input files per surface which must have the filenames "GRAF 3" and "volume".

For each surface to be plotted, the first file "GRAF 3" consists of a numeric array of only three elements. The first and second elements are the minimum and maximum possible values of the co-ordinates on the Z-axis (vertical axis) in the current surface.

The third element is the maximum value on the Z-axis across all pairs of data files, which is needed during drawing to construct each surface.

The second file "volume" consists of a 2D numeric array of 36*170 elements containing co-ordinates of surfaces on the Z-axis.

Drawing starts with the bottom surface and continues until the last surface is read in. When the second and third elements in current file "GRAF 3" are equal, then the surface is considered the last one, and drawing finishes. If the current surface is not the last one, then the next surface is read in from tape, and then drawn, and so on until the last surface is reached.
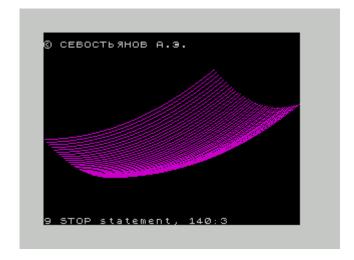
To use the program, press a key after the initial Russian instructions screen.

The following screen then shows the message **ВВЕДИТЕ ЦВЕТ**, which means **Enter Colour**. Enter a number up to 7 which equates to the standard ZX Spectrum colour numbering system. The graph will be drawn in the selected colour.

The next screen reads **ЗАПУСТИТЕ ЛЕНТУ** which means **Start Tape.** At this point, insert the tape containing the user generated data files and play it.

Generating data files

The below graph containing a single surface was plotted from the data files created by the simple example BASIC program to the right.


```
1 DIM b(3):
 DIM a(36,170):
 READ b(1),b(2),b(3):
 FOR i=1 TO 36:
 FOR j=1 TO 170:
 LET a(i,j)=.5*(i/36*i/36+j/170*j/170):
 NEXT j:
 NEXT i:
 SAVE "GRAF 3" DATA b():
 SAVE "volume" DATA a():
 DATA 0,1,1
```